REMARKS

Present Status of the Application

The Office Action rejected claims 1-3 under 35 U.S.C. 35 U.S.C. 103(a) as being unpatentable over Muilenburg (U.S. 6,604,985) in view of Goetz (U.S. 6,632,129). The Office Action rejected claims 4-6 and 12 under 35 U.S.C. 35 U.S.C. 103(a) as being unpatentable over Redeker (U.S. 6,602,724) in view of Muilenburg (U.S. 6,604,985) as modified by Goetz (U.S. 6,632,129). Applicants believe that claims 1-6 and 4-6 are already distinguished over the cited arts. For the reasons set forth below, Applicants respectfully request reexamination and reconsideration of the present invention as a whole. Applicants also respectfully request that the rejections be withdrawn.

Discussion of the Office Action Rejections

The Office Action rejected claims 1-3 under 35 U.S.C. 103(a) as being unpatentable over Muilenburg et al. (U.S. 6,604,985) in view of Goetz (U.S. 6,632,129) and stated that "Muilenburg teaches all the limitations of the claims except for the abrasive units being shaped into a triangular cone, hexagonal cone or circular cylinder set up as an array. ....Goetz teaches abrasive units shaped into a triangular cone, hexagonal cone or circular cylinder...".

Applicants respectfully traverse this rejection. In the citation, U.S. 6,604,985, Muilenburg et al. silence about the shape of the abrasive composites 210. More specifically, Muilenburg et al. neither teach nor suggest that the shape of the composites 210 includes

triangular cone, hexagonal cone or circular cylinder. They never mention that the composite 210 possesses an acute top. Furthermore, in Figs. 11, 12 and 13, the top of the composite 210 is flat and dose not possess an acute top point.

Moreover, the Office Action alleged that Goetz has already taught the shape of the abrasive units. However, in the cited art, Goetz neither teaches nor suggest that the abrasive units can be shaped into a cone shape. Goetz only mentions that the rigid segments 22 of the rigid element 34 have a variety of shapes including circular, elliptical, polygonal, e.g., triangles, rectangles, hexagons and octagons (col. 6, lines 42-45). Further, Goetz emphasizes that the subpad 2 including the rigid element 34 is disposed between the fixed abrasive element 14 and the relatively more resilient element 26 (col. 5, lines 1-3). It is understood that Goetz only point out the shape of the rigid segments 22 of the rigid element 34 of the subpad 2 and Goetz never mentions any physical figure of the fixed abrasive element 14. Therefore, even if people skill in the art did modify Muilenburge's disclosure with Goetz's disclosure, the combination result would not possess the advantage as same as what the present invention provides since neither Muilenburg et al. nor Goetz has the motivation to shape the abrasive units into a triangular cone, hexagonal cone or circular cylinder. Hence, Applicants respectfully assert that claims 1-3 patentably define over the combination of Muilenburg et al. and Goetz. Reconsideration and withdrawal of this rejection are respectively requested.

Also, the Office Action rejected claims 4-6, 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Redeker (U.S. 6,602,724) in view of Muilenburg (U.S. 6,604,985) as modified by Goetz (U.S. 6,632,129) and asserted that "Redeker teaches that the second polishing rate is

faster than the first polishing rate (col. 11, lines 8-15)". Applicants respectfully disagree. In col. 11, lines 8-15 of the cited art, Redeker et al. never mentions about the polishing rate about the second polishing process and the first polishing process.

Applicants respectfully direct the Office's attention to col. 10, lines 60-62 and col. 12, lines 45-67, where Redeker specifically teaches that polishing at the second polishing station with a second polishing surface at a rate lower than that at the first polishing station with a first polishing surface. The present invention, on the other hand, teaches that second polishing operation with the second polishing pad, where the surface of the second abrasive units in contact with the wafer is roughened, is conducted at a faster rate or at least the same rate as in the first polishing operation. As shown in Figure 3 of the specification, the removal rate for polishing silicon oxide using a roughened polishing pad is significantly higher than that using a planar polishing pad in the first polishing operation. As a matter of fact, this invention is directed to, among other things, maintaining the polishing rate, not to slow down the polishing rate, by using the abrasive units with a roughened surface. Accordingly, Redeker teaches away from this invention, and the motivation to combine Redeker with Muilenburg is thus lacking.

Hence, Applicants respectfully assert that claim 4 patentably define over the combination of Redeker et al., Muilenburg et al. and Goetz. Reconsideration and withdrawal of this rejection are respectively requested.

For at least these reasons, Applicants respectfully assert that Redeker in view of Muilenburg and Goetz fails to render claim 4 unpatentable. Since claims 5-6, 11 and 12 are dependent claims which further define the invention recited in claim 4, Applicants respectfully assert that

these claims also are in condition for allowance. Thus, reconsideration and withdrawal of this rejection are respectively requested.

CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 1-6, 11 and 12 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,
J.C. PATENTS

Date: 2/22/2005

Jiawei Huang
Registration No. 43,330

4 Venture, Suite 250
Irvine, CA 92618
Tel.: (949) 660-0761
Fax: (949)-660-0809